IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:	)	
	)	
Chi-Jung Huang	)	Confirmation Number: 8945
	)	
Serial No.: 10/646,141	)	Examiner: Iwarere, Oluseye
	)	
Filed: August 22, 2003	)	Group Art Unit: 4127
	)	
For: Method And System Of Matching Customer Demand With Production Capacity	)	TKHR Docket No.: 252011-1200
	)	Top-Team Ref: 0503-9730US
	)	

APPEAL BRIEF UNDER 37 C.F.R. § 41.37

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This Appeal Brief under 37 C.F.R. § 41.37 is submitted in support of the Notice of Appeal filed March 15, 2010, responding to the Advisory Action mailed February 17, 2010 and the FINAL Office Action mailed October 28, 2009.

I. Real Party in Interest

The real party in interest of the instant application is Taiwan Semiconductor Manufacturing Co., Ltd., having its principal place of business at No. 8, Li-Hsin Rd. 6, Science-Based Industrial Park, Hsin-Chu, Taiwan 300-77, R.O.C., as evidenced by an assignment recorded December 29, 2003 at reel/frame 014837/0451.

II. Related Appeals and Interferences

There are no known related appeals or interferences.

III. Status of Claims

All pending claims 1-33 were rejected by the FINAL Office Action, and all of these claims are the subject of this appeal.

IV. Status of Amendments

No amendments have been made after the FINAL Office Action, and all amendments submitted prior to that time have been entered. The claims in the attached claims Appendix reflect the present state of Appellant's claims.

V. Summary of Claimed Subject Matter

The claimed inventions are summarized below with reference numerals and references to the written description ("specification") and drawings. The subject matter described in the following appears in the original disclosure at least where indicated, and may further appear in other places within the original disclosure.

Embodiments of the present invention, such as that defined by claim 1 are directed to a computer-implemented method of matching customer demand with a manufacturer supply of products from plurality of factory facilities (see e.g., FIG. 1, p. 8, line 24 through p. 10, line 11), comprising using a computer to perform the steps of: inputting demand data (see e.g., FIG. 1, step S100, p. 8, lines 26-30) for a demand of at least one product requested by at least one customer and supply data corresponding to a production capacity of the factory facilities; performing a first matching operation (see e.g., FIG. 1, step S102, p. 8, lines 31-33) to match the demand data with the supply data to obtain a first demand-supply matching result; collecting rematched demand data (see e.g., FIG. 1, step S108, p. 9, lines 8-9) corresponding to a portion of the demand unsatisfied by the first matching operation from the demand data and collecting rematched supply data corresponding to a portion of the production capacity unused in the first matching operation from the supply data; classifying the rematched demand data (see e.g., FIG. 1, step S110, p. 9, lines 13-15) into a plurality of classified demand data records according to at least one attribute of the at least one product and the at least one customer corresponding thereto, the classified demand data having different priorities (p. 9, lines 14-15); and performing a second matching operation (see e.g., FIG. 1, step S112, p. 9, lines 26-30) to match the classified demand data with the rematched supply data based on the priorities of the classified demand data to obtain a second demand-supply matching result.

Embodiments of the present invention, such as that defined by claim 25 are directed to a system of demand and capacity management, comprising: an allocation planning module (see e.g., p. 8, lines 1-4) to receive demand data for a demand of at

least one product requested by at least one customer and supply data corresponding to production capacity of factory facilities; a capacity model having route information for the product (see e.g., p. 8, lines 4-6), wherein the route information records a plurality of tools (see e.g., p. 8, lines 5-6); and a capacity management module to reserve capacity according to the demand data and the route information (see e.g., p. 8, lines 6-8).

VI. Grounds of Rejection to be Reviewed on Appeal

1. Claims 1-7, 9-15 and 17-23 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Kaneko et al. (2001/0020230) in view of Ham (US 7,370,005).

2. Claims 8, 16, 24 and 25-32 and 33 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Kaneko and Ham, further in view of Menninger et al. (US 6,954,736).

3. The combination of Kanedo and Ham is improper.

VII. Arguments

Claims 1-7, 9-15 and 17-23 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Kaneko in view of Ham

Claims 1-7, 9-15 and 17-23 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Kaneko et al. (2001/0020230) in view of Ham (US 7,370,005). Applicant respectfully disagrees with these rejections.

In order for a claim to be properly rejected under 35 U.S.C. §103(a), the teachings of the prior art reference must suggest all features of the claimed invention to one of ordinary skill in the art. Among these rejected claims, claims 1, 9 and 17 are independent claims. Claims 9 and 17 are rejected on the same basis as claim 1.

Therefore, remarks are provided regarding to patentability of the independent claim 1, with the understanding that these remarks are applicable to the rejections of claims 9 and 17 as well.

Independent claim 1 recites:

> 1. A computer-implemented method of matching customer demand with a manufacturer supply of products from plurality of factory facilities, comprising using a computer to perform the steps of:
> inputting demand data for a demand of at least one product requested by at least one customer and supply data corresponding to a production capacity of the factory facilities;
> performing a first matching operation to match the demand data with the supply data to obtain a first demand-supply matching result;
> ***collecting rematched demand data corresponding to a portion of the demand unsatisfied by the first matching operation from the demand data and collecting rematched supply data corresponding to a portion of the production capacity unused in the first matching operation from the supply data;***
> ***classifying the rematched demand data into a plurality of classified demand data records according to at least one attribute of the at least one product and the at least one customer corresponding thereto, the classified demand data having different priorities; and***
> ***performing a second matching operation to match the classified demand data with the rematched supply data based on the priorities of the classified demand data to obtain a second demand-supply matching result.***

(*Emphasis added*). Claim 1 patently defines over the cited art for at least the reasons that the cited art fails to disclose the features emphasized above.

One of the main features of claim 1 is that, after the first matching operation, the demand unsatisfied by the first matching operation (*i.e.*, rematched demand data) is further classified according to attribute(s) of the product and the customer pertaining to the demand, and the classified rematched demand data is then processed in a second matching operation. Neither Kaneko nor Ham teaches this feature.

The FINAL Office Action (page 4) alleges that Ham teaches 'classifying demand data into three groups', and therefore concludes that 'Ham teaches inventory replication based upon order fulfillment rates with the features of classifying the rematched demand data into a plurality of classified demand data records according to at least one attribute of the at least one product and the at least one customer corresponding thereto and the classified demand data having different priorities'. Applicant disagrees with this allegation and submits that the conclusion is not supported on the basis of the facts gleaned from the cited reference.

First, Applicant notes that the statement: "abstract discusses classifying demand data into three groups" (FINAL Office Action, p. 4, line 10) simply isn't supported by the teachings of Ham. In fact, the abstract of Ham, in total, teaches:

> A load balancing technology segregates various inventory types (e.g., potatoes vs. milk, vs. pretzels, vs. tissue paper, etc.) based upon how frequently they are ordered in a distribution center. Inventory types that are ordered at the slowest rate are not "replicated" over multiple pods in the distribution center. Rather, they are constrained to reside at a single pod within the distribution center. Items that are ordered somewhat more frequently than those in the slowest group are replicated in multiple pods across the distribution center. In other words, these items are separately stocked at locations on more than one pod in the distribution center. This means that a container passing through the distribution center can obtain each of the items in the second group of item types at multiple pods in the distribution center. Thus, these items do not create a bottleneck in the order fulfillment process. Inventory types in a third group, the fastest movers, are segregated from items in the first two groups. They are stored in a separate type of pod that fulfills orders even faster than the other type of pods.

As can be readily verified, by even a cursory inspection of the abstract of Ham, Ham doe not teach classing demand data into three groups. Instead, the abstract describes

three different types of inventory (e.g., slow, moderate, and fast-moving inventory), and it appears that the Office Action may have confused this with the claimed feature.

More particularly, According to the abstract of Ham, "inventory items are segregated into various inventory types based upon how frequently they are ordered in a distribution center." In other words, according to Ham, the subjects that are classified are 'inventory items'. Persons of ordinary skill in the art would understand the "inventory items" of Ham to be supplies, rather than demands. Consequently, the statement "abstract discusses classifying demand data into three groups" is clearly misplaced. For at least this reason, the rejection is misplaced and should be overturned.

In addition, the conclusion that "Ham teaches inventory replication based upon order fulfillment rates with the features of classifying the rematched demand data into a plurality of classified demand data records according to at least one attribute of the at least one product and the at least one customer corresponding thereto and the classified demand data having different priorities" cannot properly be drawn from the teachings of Han.

The inventory segregation of Ham does not disclose the features of *classifying the rematched demand data*.

Furthermore, the Examiner maintained that: "items being arranged based on how frequently they are ordered is a measure of the demand for those items" (Office Action, page 18). Applicant disagrees, and submits that whether or not the operation of arranging items is a measure of the demand, it cannot change the fact that "segregating inventories" of Ham does not disclose the main feature described above -- *i.e.*, "after the first matching operation, the demand unsatisfied by the first matching operation (i.e.,

rematched demand data) is further classified according to attribute(s) of the product and the customer pertaining to the demand, and the classified rematched demand data is then processed in a second matching operation." For at least this additional reason, the rejection of claim 1 should be overturned.

Further, claim 1 does not claim mere duplication of essential working parts (as alleged in page 19 of the FINAL Office Action), the demand unsatisfied by the first matching operation (*i.e.*, rematched demand data) is further classified after the first matching operation, and the second matching operation is implemented on the classified rematched demand data.

The FINAL Office Action admits that Kaneko fails to teach the features of "classifying the rematched demand data into a plurality of classified demand data records according to at least one attribute of the at least one product and the at least one customer corresponding thereto, the classified demand data having different priorities; and performing a second matching operation to match the classified demand data with the rematched supply data based on the priorities of the classified demand data to obtain a second demand-supply matching result". In addition, as discussed above, Ham does not teach the features of the classifying step and the second matching operation, either.

For these reasons, teachings of Kaneko and Ham (collectively) do not suggest all features of the claim 1 to one of ordinary skill in the art. Therefore, even if Kaneko and Ham could be properly combined, the resulting combination still fails to teach or suggest all features of claim 1. Accordingly, the rejection of claim 1 should be overturned. As noted above, the rejections of claims 9 and 17 should be overturned for the same

reasons as claim 1. Insofar as all remaining claims depend from claim 1, claim 9, or claim 17, the rejections of all remaining claims should be overturned for the same reasons.

Claims 8, 16, 24 and 25-32 and 33 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Kaneko and Ham, further in view of Menninger

Claims 8, 16, 24 and 25-32 and 33 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Kaneko and Ham, further in view of Menninger et al. (US 6,954,736). Claims 8, 16, and 24 depend from allowable claims and should be allowed for the same reasons. Among the rejected claims, claim 25 is the independent claim. Therefore, remarks are provided regarding to patentability of the independent claim 25.

The FINAL Office Action (pages 11~12) alleged that Menninger teaches the capacity model and the capacity management module of claim 25. More specifically, the Office Action states that the "leading to predictive supply chain decisions" (*citing* Menninger, col. 17, lines 50-53) is construed as the route information for the product. According to claim 25, the route information records a plurality of tools processing the products.

Claim 25 recites:

> 25. A system of demand and capacity management, comprising:
> an allocation planning module to receive demand data for a demand of at least one product requested by at least one customer and supply data corresponding to production capacity of factory facilities;
> ***a capacity model having route information for the product, wherein the route information records a plurality of tools;*** and
> a capacity management module to reserve capacity according to the demand data and the route information.

(*Emphasis added*). Claim 25 patently defines over the cited art for at least the reasons that the cited art fails to disclose the features emphasized above.

On the contrary, according to Menninger, a mechanism for order confirmation in a supply chain management framework is provided, one of ordinary skill in the art can know, from the context, the 'predictive supply chain decisions' have nothing to do with the "tools" of claim 25. Therefore, the 'predictive supply chain decisions' do not disclose the "route information," which records a plurality of tools.

Applicant submits that, to one of ordinary skill in the art, neither 'leading to predictive supply chain decisions' (Menninger, col. 17, lines 50-53) nor 'a first set of data collected from a plurality of stores of the supply chain utilizing a network (Menninger, col. 17, 58-60) has anything to do with the "capacity model having route information for the product, wherein the route information records a plurality of tools" of claim 25. For at least these reasons, the rejection of claim 25 should be overturned.

The Office Action also stated that Menninger teaches the "capacity management module" of claim 25, in col. 129, lines 29-31 and col. 17, lines 60-67. Applicant disagrees.

According to the cited paragraphs, a second set of data is compared against the forecasting in operation 1136, wherein the second set of data relates to the amount of goods sold by the stores. To one of ordinary skill in the art, "comparing the amount of goods sold by the stores against a forecasting" simply has nothing to do with "reserving production capacity of the factory facilities according to the demand data and the route information," as defined in claim 25. For at least this additional reason, the rejection of claim 25 should be overturned.

In addition, since the Menninger does not disclose the route information which records a plurality of tools, it is impossible for Menninger to disclose "reserving production capacity of the factory facilities according to the demand data and the route information."

For at least these reasons, the collective teachings of Kaneko, Ham and Menninger (even if these references could be properly combined) do not suggest all features of the claim 25 to one of ordinary skill in the art. Accordingly, the rejection of claim 25 should be overturned.

Claim 25 serves as the base claim for claims 26-33, which patently defines over the cited art, and the teachings of claims 26-33 cannot be obtained by the teachings of the cited arts, and the rejections of claims 26-33 should be overturned.

The combination of Kanedo and Ham is improper.

As a separate and independent basis for the patentability of all claims, Applicant submits that the combination of Kanedo and Ham is improper and therefore does not render the claims obvious. In this regard, the Office Action combined Ham with Kanedo to reject the claims on the solely expressed basis that "it would have been obvious … in order to adequately fulfill an order." (*see e.g.*, FINAL Office Action, p. 4)

This rationale is both incomplete and improper in view of the established standards for rejections under 35 U.S.C. § 103.

In this regard, the MPEP section 2141 states:

> The Supreme Court in KSR reaffirmed the familiar framework for determining obviousness as set forth in Graham v. John Deere Co. (383 U.S. 1, 148 USPQ 459 (1966))… As reiterated by the Supreme Court in KSR, the framework for the objective analysis for determining

> obviousness under 35 U.S.C. 103 is stated in Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966). Obviousness is a question of law based on underlying factual inquiries. The factual inquiries enunciated by the Court are as follows:
>
> (A) Ascertaining the differences between the claimed invention and the prior art; and
>
> (B) Ascertaining the differences between the claimed invention and the prior art; and
>
> (C) Resolving the level of ordinary skill in the pertinent art.
>
> In addition:
>
> When applying 35 U.S.C. 103, the following tenets of patent law must be adhered to:
>
> (A) The claimed invention must be considered as a whole;
>
> (B) The references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination;
>
> (C) The references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention and
>
> (D) Reasonable expectation of success is the standard with which obviousness is determined.

Hodosh v. Block Drug Co., Inc., 786 F.2d 1136, 1143 n.5, 229 USPQ 182, 187 n.5 (Fed. Cir. 1986).

As reflected above, the foregoing approach to obviousness determinations was recently confirmed by the United Stated Supreme Court decision in KSR INTERNATIONAL CO. V. TELEFLEX INC. ET AL. 550 U.S. 1, 82 USPQ2d 1385, 1395-97 (2007), where the Court stated:

> In Graham v. John Deere Co. of Kansas City, 383 U. S. 1 (1966), the Court set out a framework for applying the statutory language of §103, language itself based on the logic of the earlier decision in Hotchkiss v. Greenwood, 11 How. 248 (1851), and its progeny. See 383 U. S., at 15–17. The analysis is objective:
>
> "Under §103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc.,

> might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented." Id., at 17–18.

Indeed, as now expressly embodied in MPEP 2143, "[t]he ***key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious***. The Supreme Court in KSR noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit." (*Emphasis added, MPEP 2143*). "Objective evidence relevant to the issue of obviousness ***must*** be evaluated by Office personnel." (MPEP 2141). "The key to supporting any rejection under 35 U.S.C. 103 is the ***clear articulation of the reason(s)*** why the claimed invention would have been obvious. The Supreme Court in KSR noted that the analysis supporting a rejection under 35 U.S.C. 103 ***should be made explicit***. The Court quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006), stated that '[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.'" (MPEP 2141).

Simply stated, the Office Action has failed to at least (1) ascertain the differences between and prior art and the claims in issue; and (2) resolve the level of ordinary skill in the art. Furthermore, the alleged rationale for combining the references is merely an improper conclusory statement that embodies clear and improper hindsight rationale. As noted above, the alleged motivation for combining Ham with Kaneko was "in order to adequately fulfill an order." However, absolutely no discussion was provided in the Office Action as to why or how the combination would result in improved adequacy of order fulfillment. Indeed, no discussion was provided by the Office Action as to why one skilled in the art would view the order fulfillment of Kaneko as being inadequate (the

stated reason that would motivate one to look for other solutions to this apparent problem with Kaneko." As such, the Office Action fails to set for the required objective indicia appropriate to support the rejection.

For at least these additional reasons, Applicant submits that the rejections of all claims are improper and should be overturned.

CONCLUSION

In summary, it is Appellant's position that Appellant's claims are patentable over the applied cited art references and that the rejection of these claims should be overturned. Appellant therefore respectfully requests that the Board of Appeals overturn the Examiner's rejection and allow Appellant's pending claims. In addition to the claims shown in the claims Appendix VIII, Appendix IX attached hereto indicates that there is no evidence being attached and relied upon by this brief. Appendix X attached hereto indicates that there are no related proceedings.

A credit card authorization is provided herewith to cover the fee associated with the accompanying appeal brief. No additional fee is believed to be due in connection with this submission. If, however, any fee is believed to be due, you are hereby authorized to charge any such fee to deposit account No. 20-0778.

Respectfully submitted,

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VIII. Claims Appendix under 37 C.F.R. § 41.37(c)(1)(viii)

The following are the claims that are involved in this Appeal.

1. A computer-implemented method of matching customer demand with a manufacturer supply of products from plurality of factory facilities, comprising using a computer to perform the steps of:

inputting demand data for a demand of at least one product requested by at least one customer and supply data corresponding to a production capacity of the factory facilities;

performing a first matching operation to match the demand data with the supply data to obtain a first demand-supply matching result;

collecting rematched demand data corresponding to a portion of the demand unsatisfied by the first matching operation from the demand data and collecting rematched supply data corresponding to a portion of the production capacity unused in the first matching operation from the supply data;

classifying the rematched demand data into a plurality of classified demand data records according to at least one attribute of the at least one product and the at least one customer corresponding thereto, the classified demand data having different priorities; and

performing a second matching operation to match the classified demand data with the rematched supply data based on the priorities of the classified demand data to obtain a second demand-supply matching result.

2. The computer-implemented method as claimed in claim 1, wherein the first matching operation step further comprises the steps of:

recording the first demand-supply matching result; and

updating the demand data and the supply data according to the first demand-supply matching result.

3. The computer-implemented method as claimed in claim 1, wherein the second matching operation step further comprises the steps of:

recording the second demand-supply matching result; and

updating the demand data and the supply data according to the second demand-supply matching result.

4. The computer-implemented method as claimed in claim 1, wherein the demand data is defined by creating a demand table, the demand table characterizing the relationship between customer demand, the factory facilities, and manufacturing processes for the product as provided thereby.

5. The computer-implemented method as claimed in claim 1, wherein the supply data is defined by creating a supply table, the supply table characterizing the relationship between the factory facilities, the capacity and manufacturing processes provided by the factory facilities.

6. The computer-implemented method as claimed in claim 1, wherein the rematched demand data is defined by creating a rematched demand table that characterizes the relationship between unsatisfied demand, the factory facilities, and manufacturing processes for the product as provided thereby.

7. The computer-implemented method as claimed in claim 1, wherein the rematched supply data is defined by creating a plurality of rematched supply tables, the rematched supply tables characterizing the available factory facilities of the manufacturing processes, the manufacturer preferred factory facilities under cost consideration, and the customer preferred factory facilities.

8. The computer-implemented method as claimed in claim 1, wherein the attributes of the corresponding products and customers are new customers and manufacturing processes of the product, existing customers and new manufacturing processes of the product, and existing customers and manufacturing processes of the product.

9. A storage medium for storing a computer program providing a method of matching customer demand with a manufacturer supply of a product from a plurality of factory facilities, the method comprising the steps of:

inputting demand data for a demand of at least one product requested by at least one customer and supply data corresponding to a production capacity of the factory facilities;

performing a first matching operation to match the demand data with the supply data to obtain a first demand-supply matching result;

collecting rematched demand data corresponding to a portion of the demand unsatisfied in the first matching operation from the demand data and collecting rematched supply data corresponding to a portion of the production capacity unused in the first matching operation from the supply data;

classifying the rematched demand data into a plurality of classified demand data records according to attributes of the at least one product and the at least one customer corresponding thereto, the classified demand data having different priorities; and

performing a second matching operation to match the classified demand data with the rematched supply data based on the priorities of the classified demand data to obtain a second demand-supply matching result.

10. The storage medium as claimed in claim 9, wherein the first matching operation step further comprises the steps of:

recording the first demand-supply matching result; and

updating the demand data and the supply data according to the first demand-supply matching result.

11. The storage medium as claimed in claim 9, wherein the second matching operation step further comprises the steps of:

recording the second demand-supply matching result; and

updating the demand data and the supply data according to the second demand-supply matching result.

12. The storage medium as claimed in claim 9, wherein the demand data is defined by creating a demand table, the demand table characterizing the relationship between customer demand, the factory facilities, and manufacturing processes for the product as provided thereby.

13. The storage medium as claimed in claim 9, wherein the supply data is defined by creating a supply table, the supply table characterizing the relationship between the factory facilities, the capacity and manufacturing processes for the product as provided by the factory facilities.

14. The storage medium as claimed in claim 9, wherein the rematched demand data is defined by creating a rematched demand table that characterizes the relationship between unsatisfied demand, the factory facilities, and manufacturing processes for the product as provided thereby.

15. The storage medium as claimed in claim 9, wherein the rematched supply data is defined by creating a plurality of rematched supply tables, the rematched supply tables characterizing the available factory facilities of the manufacturing processes, the manufacturer preferred factory facilities under cost consideration, and the customer preferred factory facilities.

16. The storage medium as claimed in claim 9, wherein the attributes of the corresponding products and customers are new customers and manufacturing processes of the product, existing customers and new manufacturing processes of the product, and existing customers and manufacturing processes of the product.

17. A system for matching customer demand with a manufacturer supply of a product from a plurality of factory facilities, comprising:

a match database, storing demand data for a demand of at least one product requested by at least one customer and supply data corresponding to a production capacity of the factory facilities;

a rematch database, storing rematched demand data and rematched supply data;

a customer interface, enabling input of the demand data;

a factory interface, enabling input of the supply data; and

a controller computer, coupled to the match database, the rematch database, the customer interface, and the factory interface, performing a first matching operation to match the demand data with the supply data to obtain a first demand-supply matching result, collecting rematched demand data corresponding to a portion of the demand unsatisfied in the first matching operation from the demand data and collecting rematched supply data corresponding to a portion of the production capacity unused in the first matching operation from the supply data, classifying the rematched demand data into a plurality of classified demand data records according to attributes of the at least one product and the at least one customer corresponding thereto, the classified

demand data having different priorities, and performing a second matching operation to match the classified demand data with the rematched supply data based on the priorities of the classified demand data to obtain a second demand-supply matching result.

18. The system as claimed in claim 17, wherein the controller computer further records the first demand-supply matching result, and updating the demand data and the supply data according to the first demand-supply matching result after the first matching operation.

19. The system as claimed in claim 17, wherein the controller computer further records the second demand-supply matching result, and updating the demand data and the supply data according to the second demand-supply matching result after the second matching operation.

20. The system as claimed in claim 17, wherein the demand data is defined by creating a demand table, the demand table characterizing the relationship between customer demand, the factory facilities, and manufacturing processes for the product as provided thereby.

21. The system as claimed in claim 17, wherein the supply data is defined by creating a supply table, the supply table characterizing the relationship between the

factory facilities, the capacity and manufacturing processes for the product as provided by the factory facilities.

22. The system as claimed in claim 17, wherein the rematched demand data is defined by creating a rematched demand table that characterizes the relationship between unsatisfied demand, the factory facilities, and manufacturing processes for the product as provided thereby.

23. The system as claimed in claim 17, wherein the rematched supply data is defined by creating a plurality of rematched supply tables, the rematched supply tables characterizing the available factory facilities of the manufacturing processes, the manufacturer preferred factory facilities under cost consideration, and the customer preferred factory facilities.

24. The system as claimed in claim 17, wherein the attribute of the corresponding products and customers are new customers and manufacturing processes of the product, existing customers and new manufacturing processes of the product, and existing customers and manufacturing processes of the product.

25. A system of demand and capacity management, comprising:

an allocation planning module to receive demand data for a demand of at least one product requested by at least one customer and supply data corresponding to production capacity of factory facilities;

a capacity model having route information for the product, wherein the route information records a plurality of tools; and

a capacity management module to reserve capacity according to the demand data and the route information.

26. The system as claimed in claim 25, wherein the allocation planning module further comprises:

a data input module, inputting the demand data the supply data;

a first match module, performing a first matching operation to match the demand data with the supply data to obtain a first demand-supply matching result;

a rematch data collection module, collecting rematched demand data corresponding to a portion of the demand unsatisfied in the first matching operation from the demand data and collecting rematched supply data corresponding to a portion of the unused capacity in the first matching operation from the supply data;

a classification module, classifying the rematched demand data into a plurality of classified demand data records according to attributes of the corresponding products and customers, the classified demand data having different priorities; and

a second match module, performing a second matching operation to match the classified demand data with the rematched supply data based on the priorities of the classified demand data to obtain a second demand-supply matching result.

27. The system as claimed in claim 26, wherein the first match module further comprises:

a first record module, recording the first demand-supply matching result; and

a first update module, updating the demand data and the supply data according to the first demand-supply matching result.

28. The system as claimed in claim 26, wherein the second match module further comprises:

a second record module, recording the second demand-supply matching result; and

a second update module, updating the demand data and the supply data according to the second demand-supply matching result.

29. The system as claimed in claim 26, wherein the demand data is defined by creating a demand table, the demand table characterizing the relationship between customer demand, the factory facilities, and manufacturing processes provided by the factory facilities.

30. The system as claimed in claim 26, wherein the supply data is defined by creating a supply table, the supply table characterizing the relationship between the factory facilities, the capacity and manufacturing processes for the product as provided by the factory facilities.

31. The system as claimed in claim 26, wherein the rematched demand data is defined by creating a rematched demand table that characterizes the relationship

between unsatisfied demand, the factory facilities, and manufacturing processes for the product as provided thereby.

32. The system as claimed in claim 26, wherein the rematched supply data is defined by creating a plurality of rematched supply tables, the rematched supply tables characterizing the available factory facilities of the manufacturing processes, the manufacturer preferred factory facilities under cost consideration, and the customer preferred factory facilities.

33. The system as claimed in claim 26, wherein the attribute of the corresponding products and customers are new customers and manufacturing processes of the product, existing customers and new manufacturing processes of the product, and existing customers and manufacturing processes of the product.

IX. Evidence Appendix under 37 C.F.R. § 41.37(c)(1)(ix)

None.

X. Related Proceedings Appendix under 37 C.F.R. § 41.37(c)(1)(x)

None.